Name: _____ Date: _____

Why Leaves Change Color

Circle group

Each fall, the green leaves on lots of trees turn red, orange, and gold. They seem to come from nowhere. But the story starts in spring and summer.

In the warm months, leaves are full of a green stuff called chlorophyll. A leaf uses it to catch sunlight. With that light, the leaf turns water and air into sugar. The sugar feeds the tree. In summer there is so much chlorophyll that its green hides the other colors.

In the fall, days get short and nights get cool. The tree gets set for winter. It makes less food. The chlorophyll breaks apart. The green fades away.

Now we can see the other colors. Yellow and orange were in the leaf all along. They were hidden under the green. Red is not the same. Lots of trees make new red color in the fall. Bright, sunny days and cool nights give the best show.

At last, the leaves dry up and fall. The tree rests all winter. It grows new leaves in the spring.

Questions

1. What is chlorophyll? What does it do?

_____

_____

2. Why are leaves green all summer?

_____

_____

3. Which colors were in the leaf all along?

_____

_____

4. What tells the tree to get set for winter?

_____

_____

5. How is red not the same as yellow and orange?

_____

_____

Words to know

chlorophyll: the green substance in plants that catches sunlight

fade: to slowly lose color

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why Leaves Change Color

Triangle group

Every autumn, the green leaves on many trees turn red, orange, and gold. The colors seem to appear out of nowhere, but the story starts in the spring and summer.

During the warm months, leaves are full of a green substance called chlorophyll. A leaf uses chlorophyll to catch sunlight. With that light, the leaf turns water and air into sugar, which feeds the tree. Chlorophyll is so plentiful in summer that its green color hides everything else.

As autumn comes, the days grow shorter and the nights grow cooler. The tree gets ready for winter by slowing down its food making. The chlorophyll breaks apart, and the green fades away.

Now the other colors can be seen. Yellow and orange were in the leaf all along, hidden underneath the green. Red is different. Many trees make new red coloring in the fall, and bright sunny days with cool nights give the best show.

Finally, the leaves dry up and fall. The tree rests through the winter and grows new leaves in the spring.

Questions

1. What is chlorophyll, and what does it do?

_____

_____

2. Why do leaves look green all summer?

_____

_____

3. Which colors were hiding in the leaf all along?

_____

_____

4. What signals the tree to get ready for winter?

_____

_____

5. How is the red color different from yellow and orange?

_____

_____

Words to know

chlorophyll: the green substance in plants that catches sunlight
substance: a kind of matter, or stuff, that something is made of
plentiful: there is a lot of it
autumn: the season between summer and winter; also called fall
fade: to slowly lose color

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why Leaves Change Color

Square group

Every autumn, the green leaves on many trees transform into brilliant shades of red, orange, and gold. Although the colors seem to appear out of nowhere, the explanation actually begins during spring and summer.

Throughout the warm months, leaves are packed with a green substance called chlorophyll. A leaf relies on chlorophyll to capture sunlight. Using that light energy, the leaf converts water and air into sugar, which nourishes the tree. In summer, chlorophyll is so plentiful that its green color completely conceals everything else.

As autumn approaches, the days become shorter and the nights grow cooler. In preparation for winter, the tree gradually reduces its food production. The chlorophyll breaks down, and the green slowly fades away.

At last, the other colors become visible. Yellow and orange pigments were present in the leaf all along, hidden underneath the green. Red, however, is different. Many trees manufacture new red coloring in the fall, and bright, sunny days combined with cool nights produce the most spectacular display.

Eventually, the leaves dry up and drop to the ground. The tree rests throughout the winter and produces new leaves in the spring.

Questions

1. What is chlorophyll, and what role does it play in a leaf?

_____

_____

2. Why do leaves appear green throughout the summer?

_____

_____

3. Which pigments were present in the leaf all along?

_____

_____

4. What changes in the season signal the tree to prepare for winter?

_____

_____

5. In what way is red coloring different from yellow and orange?

_____

_____

Words to know

chlorophyll: the green substance in plants that catches sunlight
substance: a kind of matter, or stuff, that something is made of
plentiful: there is a lot of it
autumn: the season between summer and winter; also called fall
fade: to slowly lose color

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Why Leaves Change Color

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Why Leaves Change Color

Easier · 173 words · Flesch-Kincaid grade 1.5

1. A green stuff in leaves. It catches sunlight so the leaf can make sugar for the tree.
2. There is so much chlorophyll that its green hides the other colors.
3. Yellow and orange.
4. The days get short and the nights get cool.
5. Yellow and orange were in the leaf all along. Lots of trees make new red color in the fall.

Triangle: Why Leaves Change Color

This passage · 174 words · Flesch-Kincaid grade 4.7

1. A green substance in leaves that catches sunlight so the leaf can make sugar for the tree.
2. There is so much chlorophyll in them that its green color hides the other colors.
3. Yellow and orange.
4. The days grow shorter and the nights grow cooler.
5. Yellow and orange were already in the leaf. Many trees make new red coloring in the fall.

Square: Why Leaves Change Color

Harder · 189 words · Flesch-Kincaid grade 8.1

1. A green substance that captures sunlight so the leaf can convert water and air into sugar for the tree.
2. Chlorophyll is so plentiful that its green color conceals the other colors.
3. Yellow and orange.
4. The days become shorter and the nights grow cooler.
5. Yellow and orange were already in the leaf. Many trees manufacture new red coloring in the fall.